

Sunrise Water Authority

Creating a Sustainable Utility



Recent History

Over the past five years, the Authority has faced substantial growth from a rapidly expanding housing market, centered in and around the city of Happy Valley, and the preliminary organization of the new city of Damascus.

Depending on how future growth unfolds, the Authority will continue to face rising demands for water and the need for additional sources of reliable supply. In order to meet those needs, the agency will continue to look to develop strategic water supply agreements with partnering local providers, including the North Clackamas County Water Commission, Clackamas River Water and South Fork Water Board.

The growth has created several important consequences, most notably an expanded customer-base and the issuance of substantial debt in order to finance the expansion of the Authority's distribution system. The rapid growth, however, has been followed by a national recession that has all but stalled the local housing market over the past couple of years. The loss of anticipated system development charges has forced a substantial transfer of rate revenue to debt service, with an annual debt payment of about \$2.2 million. Presently, the Authority has about \$22 million in remaining long-term debt to pay off through 2026.

General Status

Over the past six periods, the Authority has experienced steady increases in annual revenue, starting at just under \$2.64 million in fiscal year 2004-05 and extending to a projected high of \$5.4 million at the end of 2010-11. This increase is due to a combination of growth in the number of connections and an 83% increase

in the average rate per 100 cubic feet (ccf) of water sold. These revenue increases have been offset by similar increases in total expenses, led by notable increases in labor, benefits, water purchases, and electricity.

An analysis of these expenses shows, that even though the total number of staff as quantified by full-time equivalents (FTEs) has fallen from a high of 25.25 in 2005-06 to 18.5 in 2010-11, the total cost for labor has remained about the same. These total labor costs include a 34% increase in salaries and a 52% increase in benefits per FTE. However, the total labor, material and services costs per CCF of production have remained essentially unchanged (if not fallen slightly) over the 6 year period (as normalized for an approximate 11% increase in the Consumer Price Index, CPI). Moreover, the actual volume of water sold per connection has declined dramatically. Total water sales dropped more than 10% by volume alone over the past fiscal year and nearly 20% in the 12-month rolling average compared to similar January periods in 2010 and 2011.

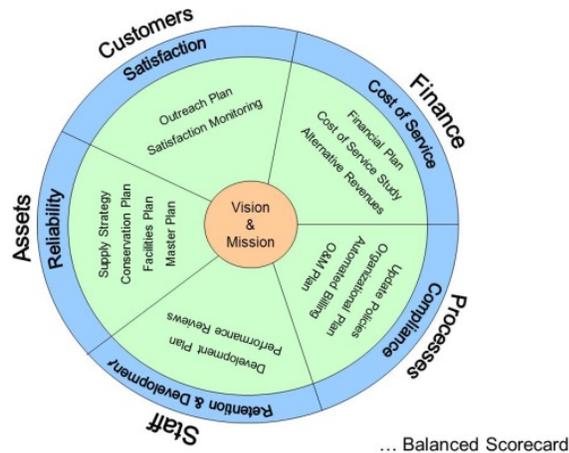
During this same six year period, the agency's overall cash position has declined by 43%, from a high of \$4.92 million in 2005-06 to \$2.79 million at the end of 2009-10. Present forecasts suggest that 2010-11 year will not improve the prior year's cash position and may, if anything, erode that total by \$300,000 to \$400,000.

Review of Key Agency Components

A modern day examination of any corporate entity reveals four major components: customers, staff, finances, and internal processes (or production). A typical utility holds a fifth major component in its capital assets.

Adequate resources must be supplied to each of these major components in order for the sum

of the corporate entity (or utility) to thrive. Deleterious performance in any one of these major components will create consequential impact among the remaining four areas.



Application of these principles to the Authority requires a separate examination of each of its major components as they relate to an overall sustainable goal.

Assets

The Authority owns and maintains more than 200 miles of pipe, 18.8 million gallons of storage, 16 booster pump stations totaling 2305 horsepower, 7 wells with a total pumping capacity of 715 horsepower and all the related valves, connections and fittings, as well as 54% of the capacity in the North Clackamas County Water Commission Treatment Plant.

Focusing solely on the transmission and distribution system, the approximate replacement cost of these facilities include:

203 miles of pipe (1,071,800 feet) =	\$90,000,000
16 Pump Stations (2305 Horsepower) =	\$6,900,000
18.8 Million Gallons Storage =	\$28,200,000
7 Wells (715 Horsepower) =	\$3,500,000
Appurtenances =	\$8,500,000
Contingency/Misc. (20%) =	\$27,400,000
 Total Estimated Asset Value =	 \$164,500,000

If the pipes and appurtenances have a useful life of 100 years and the remaining assets 50 years, the annual replacement cost in today's dollars for the entire estimated value of the assets is roughly \$2.30 million.

The Authority is currently not collecting reserves to replace its assets and spends only limited annual dollars on emergency repairs, such a main breaks, and virtually no money on annual replacement of aged assets. An asset management strategy is needed, including a comprehensive inventory of infrastructure, its remaining useful life, and replacement costs, along with a future mechanism for annual or periodic funding of system rehabilitation.

Staff

The Authority currently maintains 18 full-time equivalent (FTE) positions, including the General Manager, at an average annual salary cost of \$65,600 per FTE. The staffing numbers are down from a high of 25.25 FTE in fiscal years 2005-08 to the present number of 18 FTE. This is a substantial drop in available labor and though meter installations have fallen to low levels, there is concern regarding the agency's ability to conduct all necessary functions. The present ranks of staff include General Manager, Finance Director and staff accountant, Government Relations Specialist, Operations Manager and four operations specialist, three meter reading staff, Customer Relations Manager and three customer service representatives, and the Engineering Manager and one Technical Specialist.

Retention of staff and succession planning, especially with regards to key technical and operational staff, will be critical to the agency's future. The Authority has recently undergone turnover of its General Manager and long-time Operations Manager, both of whom had decades of knowledge concerning agency facilities, operations, and internal processes.

In order to meet future staff demands, the agency needs to develop a formal staff development and training program, along with annual review procedures based on performance management principles (i.e. goal-performance measures). In addition, a review needs to be conducted of overall staff salaries, along with living wage principles, particularly for all employees under \$20 per hour.

In addition, various key resources related to construction support and equipment, professional services in accounting, finance, and engineering, along with electrical and mechanical specialist may be required from time to time. The Authority has already responded by amending its contracting procedures to allow for the on-call acquisition of desired construction and good and service providers.

Internal Processes

The Authority's internal processes cover a wide array of functions including: records management, billing, operations and maintenance, meter reading, budgeting and accounting, safety, water quality and production monitoring, IT and SCADA, governmental relations and interagency coordination, and a host of regulatory compliance reporting. Moreover, there are probably as many goals or outcome measures as there are functions.

One of the notable features of our internal processes is the interrelation with staff and labor resources. Production efficiency has risen substantially over the past six fiscal years from a low of about 73,900 CCF per FTE in 2005-06 to a high of 139,600 CCF per FTE in 2009-10, with a current number around 110,800 CCF per FTE. This increase in production efficiency has, in large part, allowed the total cost per CCF (normalized against the CPI) to remain relatively constant over time.

The focus, however, over the past several years has been on growth and installation of new meters. Though responding to growth has been the driving force with regards to agency revenue, other needs related to records management, billing, meter reading, safety, operations and maintenance, IT, facilities, equipment, and interagency coordination have not diminished.

Records Management: The Authority has operated for decades without a formal records management program. This is not to say the agency has not complied with state record retention laws, rather a formal filing and archival system has yet to be put into place, relying heavily on continued retention of paper records and reports. A campaign is under way to convert most if not all the paper records to electronic format (except those materials required by record retention laws to be maintained in paper copy) and to archive as much material as practical. This conversion allows for obvious space savings and reliable back-up to existing files.

Along these same lines, a task has been initiated to convert the Authority's existing system drawings, including pipeline layouts, critical valve locations, and other major infrastructure features, into a mobile platform that can be read by operators in the field from laptop or tablet computers using a GIS mapping tool and web-based interface. In addition, plans are underway to convert the current work order (maintenance) requests to digital format and eliminate the manual pick-up and filing of associated paper records.

Automated Meter Reading: The Authority continues to conduct meter reading through both manual and automated procedures. The system currently maintains a total of approximately 16,000 meters, with about 2400 of those meters being automatically read. Manually read meters are billed on a bi-monthly cycle and those automatically read on a monthly cycle. The automated reading system

was installed, as a pilot study, with the intent of greatly reducing labor needs in the reading process and expanding the information on usage collected on a “real-time” basis. The latter could be used to improve leak detection and loss and promote active management of usage by customers.

The fixed area network (FAN) system, however, has had mixed results. Though usage data is being collected remotely, there are unresolved problems related to equipment reliability, requiring excessive labor for manual re-reads and repair or replacement of electronic components (the latter being very vulnerable to the wet and cold conditions of the Pacific Northwest). In addition, the system is less reliable in its operation than purported by the manufacturer and suffers from signal limitations stemming from placement below grade in a standard meter enclosure. The experience, to date, would suggest results less than desirable as far as performance and reliability, as well as costs much higher than anticipated due to ongoing maintenance, repair, and replacement of equipment. The experience suggests that the future use of the fixed area network be possibly abandoned and an alternative form of either manual or automated metering reading put into place.

Billing System: The Authority converted its billing system to a new program in 2007, with the intent of accommodating growth of future customers and expanded system capability. The new program, however, relies heavily on a remotely located (out of state) “enterprise function.” The issue here is that the main process of billing is tied directly to a software system (Enquesta) that is not within the Authority’s direct control. Though not uncommon for systems of this kind, its performance is highly-dependent on the service response of the independent software and system provider – which in our case is a company called S&S. The capability of the software is maintained by the provider’s own internal staff and desired functionality is

achieved through tailored programming conducted by the independent provider. Moreover, access to data and generation of reports is also controlled by the provider. All this leads to a system that is largely “remote controlled” causing frustration with agency customer relations staff related to lack of direct access to existing data and direct control of reporting. Staff would characterize the system as “overly complicated” and “excessively difficult” as it pertains to day-to-day operations.

The issues surrounding the billing system are further complicated by a system separation between revenue (i.e. billing) and expenses (payroll and accounts payable). The general ledger accounting is actually conducted in separate software system (Great Plains). So, the agency’s billing (revenue) and general ledger (payroll and expenses) are not linked. The balance is achieved through manual reconciliation, thus adding to the process complications and potential error related issues. Moreover, the assets and related infrastructure costs were designed to be managed in a third-party (CMMS) software platform – another element that adds even more complication to the overall goal of being able to forecast long-term or life-cycle related cost (or cash flow) for the agency.

An examination will have to be made of alternatives related to the agency’s billing and general ledger systems. A focus will be established for identifying means for closing the gap between the two systems and potential integration of the agency’s asset management tools.

Other Initiatives: The Authority staff is also undertaking steps to re-establish or initiate programs for cross-connection control, safety training, and emergency preparedness. The Authority has a current practice of installing its own cross-connection control device (double check valve) at all new residential and repaired service connections. Currently, there are about 6,000 agency-owned cross connection control

devices within the water distribution system, most of which are installed “in-duo” with separate individual property owner devices that are required as part of residential (irrigation) plumbing code. As owner of these devices, the Authority is required to conduct annual testing of each device – which currently costs half of the meter reading staff time over the year or about \$148,800. The installed per unit device cost is about \$150 (material and labor) and annual testing about \$25. An examination of the life-cycle costs and system benefits should be made before large numbers of additional devices are installed.

Mandated by state law (OR-OHSA), the Authority is required to develop and maintain an active safety and related training program. Staff is in the process of renewing its safety program and periodic inspection of safety related compliance at all its facilities. Periodic inspections by OR-OSHA staff are being coordinated as part of the agency’s program. In addition, Authority staff is looking to participate in interagency emergency preparedness (ORWARN) and will be setting related training and certification goals for key members of the agency’s staff.

Customers

The Authority serves water to an estimated population of about 40,000 customers. Our communication with those customers is primarily through billing, turn-off procedures or leak adjustments, along with annual regulatory consumer confidence (water quality) reporting. Several years ago the agency delivered a periodic newsletter and also conducted a “welcome” program of informational items to all new customers.

A greater focus needs to return toward our customers and their needs. Presently, the volume of customer communication centers on negative messages from the agency primarily targeted at punitive actions. The resulting image is likely negative or neutral at best. It has

been some time since a formal customer satisfaction survey was conducted and input gathered from our customers as to desired improvements in service or procedures. In years past, surveys of this kind were prepared and conducted by agency staff internally, which many experts on the topic suggest leads to bias in the results.

The Authority needs to develop a community outreach plan that looks to convey helpful messages to our clients regarding frequently asked questions concerning billing, payment, leak detection and other services. The agency would benefit from advanced information sharing on its web pages while also looking to enter into social media networks (e.g. Facebook, Twitter, etc.).

The Authority also faces comparative public issues among other utilities. We are the only remaining utility among our customers, except solid waste, that rely on bi-monthly billing. However, solid waste is delivered at a fixed, flat fee. The bi-monthly billing adds complication to consumer-behavior, which is largely organized around monthly household accounting. Because of monthly billing, residential customers are often accustomed to a monthly grace period (i.e. next month’s bill) before past due notifications begin. Also the price for a typical leak can be very punitive. A customer can easily run up a bill of several hundred dollars, forcing payment as much as ten or more times a normal monthly bill. This is a unique element of the water industry and one that creates a great deal of negative emotion with our customers. An option in the future might be to offer leak insurance or alternative means for leak adjustment.

In any case, the agency’s procedures may not be well-aligned with customer expectations, particularly in the area of billing or shut-off procedures. Moreover, the agency may be slow to respond to the more rapidly-evolving demands of our customers. Again, a well-designed customer survey may be needed to

help understand the consumer alignment and priorities for the agency in the future.

Finances

The Authority's finances have, of course, been the subject of much internal conversation over the past several years. The agency let substantial bond debt in the period 2003-05 to finance the construction of infrastructure designed to meet the rapidly growing housing market. Along with prior debt issuance, the Authority now owes more than \$21 million dollars of debt repayment extending through fiscal year 2025-26.

Unfortunately, the growth has stalled and revenue from system development charges is essentially non-existent. To make debt payment, the Authority has had to make substantial transfers from its General Fund to make on-going debt service. The actions have forced an equivalent reduction in operations and maintenance support and a zero net change in fund balances (i.e. no increase in reserves).

The primary problem is cash. The agency has about \$3 million in total cash; however, about \$560,000 of it is associated with the SDC fund and hence restricted with regards to open transfer to the General Fund. So, the agency has about \$2.5 million in available cash or about 170 days of its operating expenses with no reserves for major capital improvements.

The earlier discussion on assets revealed an approximate annual renewal and replacement need of about \$2.3 million dollars. However, a sizable portion of the existing infrastructure is beyond 50% of its useful life and some beyond 75% of its useful life. Hence, at some point in the next ten years, the Authority may be required through loss of service or repair demands to replace a substantial portion of its distribution components. If for example this number is roughly 20% of the aged infrastructure, a near-term (10-year) capital

requirement for replacement alone could easily be \$15-20 million. The only way to pay for that need would be to issue new debt which will likely not be an option given our current financing ratios.

The Authority needs cash to improve its bonding capacity and pay for anticipated replacements, along with restoring its level of service (e.g. operation and maintenance capacity). There are approximately 2,000 ERU credits of SDCs remaining to collect in association with the recently expanded system. That money, however, is dedicated to repaying the existing debt service. In the meantime, uncertainty reigns as to the schedule of future SDCs and the repayment to the General Fund. In the interim, level of service is diminished and operations and maintenance requirements go underfunded. Moreover, the progress of the agency is held at bay as time passes and its priorities left unattended due to lack of resources.

Moving Towards A Sustainable Utility

Sustainability is defined by the long-term success of the agency. In order to do so, performance must be achieved in each of the five major components. For the Authority, this means its customers are pleased with service, product and price and that its staff, finances, assets, and internal processes are sufficient to preserve its existence on an on-going basis.

There is no question that recent economic conditions have left the Authority with a number of challenges, none more pressing than the agency's current finances. However, the status of the other components deserves equal attention, as well. In 2007, the U.S. Environmental Protection Agency along with six major water industry associations, including the American Water Works Association, published a guidebook titled 'Effective Utility Management.' In that document, there are ten (10) prescribed attributes for an effective utility: product quality (PQ); customer satisfaction (CS);

employee development (ED); operational optimization (OO); financial viability (FV); infrastructure stability (IS); operational resiliency (OR); community sustainability (CS); water resource adequacy (WA); and stakeholder support (SS). When polled about the relative priority among the ten elements, the Authority’s management team ranked employee development as having the greatest importance and lowest achievement to date.

Polling Results for Key Effective Utility Attributes

		Achievement					
		Low				High	
		5	4	3	2	1	
Importance	High	1	ED	FV	ED, WA, FV	PQ	
		2		WA, OR	FV	WA, CS	PQ
		3	ED		PQ, FV	PQ, WA	
		4		OO	ED	WA, CS, CS	
		5		ED, ED	IS, WA	CS	
	Low	6		SU	IS, OR	PQ, PQ, IS	
		7		OR, OO	OO	OR, OO	
		8		SS	SS, OO, IS, OO, OR		
		9	OR	FV	SS, SS	CS, SU	
		10			CS, CU, SS, SU, SS		

- Table displays the relative ranking given by the six members of the Sunrise Management Team

During the lull in the economy, the agency has the opportunity to look inward at its staff and operations with a goal of identifying targeted performance criteria and improvement frameworks. One of the primary areas of interest is that of staff. The Authority needs to re-establish an active staff development program, focused on performance based individual goal planning that ties core competencies to a specific job classification and defined career track.

In addition, the agency needs to examine its labor demands and the on-going costs of conducting its meter reading and backflow testing programs. Tied to this discussion is the costs of the automated meter reading system and its value, along with the present use of a remote enterprise-based billing system that is not directly connected to the agency’s general ledger accounting. Future preferences may look to eliminate internal meter reading and the related support costs, while taking advantage of

contract labor until such time as technology improves remote reading reliability. Moreover, the continued practice of installing agency-owned residential backflow devices may need suspended and the cost-benefit of on-going testing of these devices reviewed. The agency also needs to examine the labor and support required to move to monthly billing and improved customer service.

Notwithstanding, the Authority must look closely at its current financial situation. The present debt load has severely diminished available operation and maintenance funding, forcing potential loss of service. Moreover, the agency’s present cash position cannot support needed renewal and replacement, either through direct purchase or future debt. In order to create the necessary ratios, the agency may need to fund an additional \$5 million dollars to the General Fund reserve over the next five years and \$20 million for future renewal and replacement. There is approximately \$21 million of existing debt to be paid off over the next 15 years to be funded through the future sale of approximately 2000 residential and commercial meters.

The means for creating a preferable financial profile will require a combination of rate and service charge adjustments, along with a restructuring of the rate tiers. The current bi-monthly service charge will have to increase to around \$15 in the next couple of years, supported by lowered limits on tier 1 and 2 use (e.g. 8 and 25 units per period) and associated rate increases in the various tiers to meet the noted financial demands.

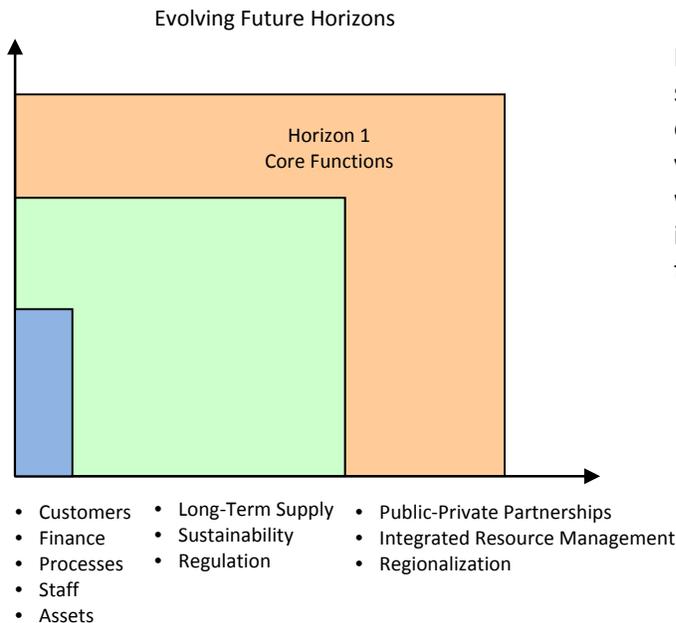
These financial targets need to be developed in coordination with a formal asset management program designed to schedule needed annual renewal and replacement within the system. The asset management program would also track infrastructure reliability and repair, along with remaining useful life of facilities.

Looking beyond the issues of today, the Authority must continue to negotiate long-term supply agreements that will meet future demands. The primary source of supply will continue to be the Clackamas River and the supply partners vested in that source, including Clackamas River Water, South Fork Water Board and the North Clackamas County Water Commission. The Authority will have to provide leadership in coordinated supply planning and resource management, focused on broadening supply and operation improvements through intergovernmental agreements and contract arrangements among its supply and delivery partners.

partnerships and the execution of public agencies in a manner that requires cost of service rates including a full accounting for renewal and replacement of existing infrastructure and levels of service that preserve regulatory compliance and customer satisfaction.

The future will demand the agency evolve with technology and the demands of our customers, while providing an ever present and safe supply of water. Regulation will expand to include additional potential contaminants of concern and the cost of operation and maintenance will force broader interagency coordination and consolidation of labor resources and facilities.

In all this, the mission to provide a safe, reliable supply of water in a customer-focused organization will not waiver. However, the vision of doing so in a sustainable framework will require a balanced approach that incorporates the demands of our customers, finances, staff, internal processes, and assets.



The Authority must also be prepared to assist the region in its plans for growth and economic development. As it does, the paradigm of existing supply and delivery models will evolve to include further opportunity for integrated resource management including wastewater and stormwater reuse, non-potable and potable source separation and expanded surface and ground water management.

The financial burden related to public infrastructure development will also force greater reliance on public and private sector